

CLAIMS

What is claimed is:

1. A composite acetabular component, comprising:  
a ceramic insert member having an inner surface and an outer surface; and  
a thermoplastic backing member molded onto the outer surface of the ceramic insert member when the thermoplastic backing member is in a substantially softened state;  
wherein the outer surface of the ceramic insert is provided with a texture so as to increase the mechanical bonding between the thermoplastic backing member and the outer surface of the ceramic liner member.
2. The invention according to Claim 1, wherein the ceramic insert member has a substantially hemispherical shape.
3. The invention according to Claim 1, wherein the texture comprises a roughened surface.
4. The invention according to Claim 3, wherein the roughened surface has an arithmetical mean roughness in the range of about 5 to about 10 microns.
5. The invention according to Claim 3, wherein the roughened surface has a ten-point mean roughness in the range of about 50 to about 75 microns.

6. The invention according to Claim 1, wherein the texture comprises a surface depression.

7. The invention according to Claim 1, wherein the texture comprises a roughened surface and a surface depression.

8. The invention according to Claim 1, wherein the thermoplastic backing member has a substantially hemispherical shape.

9. The invention according to Claim 1, wherein the thermoplastic backing member is comprised of polyethylene.

10. The invention according to Claim 1, wherein the thermoplastic backing member is comprised of ultra high molecular weight polyethylene.

11. A composite acetabular component, comprising:  
a ceramic insert member, the ceramic insert member having a substantially hemispherical shape, the ceramic insert member having an inner surface and an outer surface; and

a thermoplastic backing member molded onto the outer surface of the ceramic insert member when the thermoplastic backing member is in a substantially softened state, the thermoplastic backing member having a substantially hemispherical shape, the thermoplastic backing member having an inner surface and an outer surface;

wherein the outer surface of the ceramic insert is provided with a roughened texture so as to increase the mechanical bonding between the inner surface of the softened thermoplastic backing member and the roughened texture of the outer surface of the ceramic liner member.

12. The invention according to Claim 11, wherein the texture comprises a roughened surface.

13. The invention according to Claim 12, wherein the roughened surface has an arithmetical mean roughness in the range of about 5 to about 10 microns.

14. The invention according to Claim 12, wherein the roughened surface has a ten-point mean roughness in the range of about 50 to about 75 microns.

15. The invention according to Claim 11, wherein the texture comprises a surface depression.

16. The invention according to Claim 11, wherein the texture comprises a roughened surface and a surface depression.

17. The invention according to Claim 11, wherein the thermoplastic backing member is comprised of polyethylene.

18. The invention according to Claim 11, wherein the thermoplastic backing member is comprised of ultra high molecular weight polyethylene.

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19. An acetabulum replacement system, comprising:
- an acetabulum member;
  - a composite acetabular component, comprising:
    - a ceramic insert member having an inner surface and an outer surface; and
    - a thermoplastic backing member molded onto the outer surface of the ceramic insert member when the thermoplastic backing member is in a substantially softened state;
  - wherein the outer surface of the ceramic insert is provided with a texture so as to increase the mechanical bonding between the thermoplastic backing member and the outer surface of the ceramic liner member; and
  - a securing mechanism for securing the acetabulum member to the composite acetabular component.

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20. A hip replacement system, comprising:
- an acetabulum member;
  - a composite acetabular component, comprising:
    - a ceramic insert member having an inner surface and an outer surface; and
    - a thermoplastic backing member molded onto the outer surface of the ceramic insert member when the thermoplastic backing member is in a substantially softened state;
  - wherein the outer surface of the ceramic insert is provided with a texture so as to increase the mechanical bonding between the thermoplastic backing member and the outer surface of the ceramic liner member;
  - a femoral component having a ball-shaped portion adapted to be received in the composite acetabular component; and
  - a securing mechanism for securing the acetabulum member to the composite acetabular component.

21. A method of making a composite acetabular component, comprising:

providing a ceramic insert member having an inner surface and an outer surface;

providing a thermoplastic material;

imparting a texture to the outer surface of the ceramic insert member;

softening the thermoplastic material; and

contacting the textured outer surface of the ceramic insert member with the softened thermoplastic material for a sufficient period of time to form a thermoplastic backing member onto the textured outer surface of the ceramic insert member;

wherein the texture of the outer surface of the ceramic insert member increases the mechanical bonding between the thermoplastic backing member and the outer surface of the ceramic liner member.

22. The invention according to Claim 21, wherein the ceramic insert member has a substantially hemispherical shape.

23. The invention according to Claim 21, wherein the texture comprises a roughened surface.

24. The invention according to Claim 23, wherein the roughened surface has an arithmetical mean roughness in the range of about 5 to about 10 microns.

25. The invention according to Claim 23, wherein the roughened surface has a ten-point mean roughness in the range of about 50 to about 75 microns.

26. The invention according to Claim 21, wherein the texture comprises a surface depression.

27. The invention according to Claim 21, wherein the texture comprises a roughened surface and a surface depression.

28. The invention according to Claim 21, wherein the thermoplastic backing member has a substantially hemispherical shape.

29. The invention according to Claim 21, wherein the thermoplastic backing member is comprised of polyethylene.

30. The invention according to Claim 19, wherein the thermoplastic backing member is comprised of ultra high molecular weight polyethylene.